

IUFRO RG.7.01 “Impacts of Air Pollution and Climate Change on Forest Ecosystems”

Newsletter No. 3/2011, October 13, 2011

Prepared by Rainer Matyssek

Concerted activity COST Action FP0903 and IUFRO Unit 7.01.02:

Summer School on Ecophysiological Field Techniques in Climate Change and Pollution Research

The coordinating team of the IUFRO Unit 7.01.02 “*Impacts of air pollution and climate change on forest ecosystems – Mechanisms of action and indicator development*”, Rainer Matyssek, Alessandra Kozovits and Gerhard Wieser, leads the Working Group 2 “*Scientific gaps and modelling*” (WG2) of the COST Action FP0903 “*Climate Change and Forest Mitigation and Adaptation in a Polluted Environment*” (MAFor; chaired by Elena Paoletti and Juha-Peka Touvinen; <http://cost-fp0903.ipp.cnr.it/>).

Under the auspices of MAFor, Gerhard Wieser and Rainer Matyssek organized a 5-day Summer School on “*Ecophysiological Field Techniques in Climate Change and Pollution Research*”. The School was held on 5-9 September, 2011 at Fondazione Mach, Centro di Ecologia Alpina, Monte Bondone in Trentino, Northern Italy, in cooperation with the local host Loris Vescovo and his colleagues.

The aim of this training course was to provide young researchers with theoretical knowledge and methodological skills to become actively enrolled into the activities of MAFor, striving to augment understanding of state and potential of forest mitigation and adaptation to climate change in a polluted environment, and to reconcile process-oriented research, long-term monitoring and applied as well as mechanistic modelling. In these respects, aims of MAFor/WG2 are consistent with the rationale of IUFRO Unit 7.01.02.

On such grounds, the Summer School focused on: (1) assessing water potential, leaf-level gas exchange and sap flow in adult forest trees, and up-scaling tree water relations to stand-level water balance; (2) highlighting drought effects on tree ecophysiology employed through experimental manipulation; (3) assessing soil CO₂ efflux; and (4) introducing theoretical background knowledge about usage of eddy covariance techniques and modelling in Climate Change and Pollution Research.

Trainers were:

- Didier LeThiec, INRA UMR EEF, Champenoux, France
- Rainer Matyssek, Ecophysiology of Plants, TU Munich, Freising, Germany
- Gianfranco Rana, CRA-SCA, Bari, Italy
- Mirco Rodeghiero, FEM, Trento, Italy
- Filippo Rossi, GMR Strumenti, Italy
- Mikhail Sofiev, FMI, Helsinki, Finland
- Matteo Sottocornola, FEM, Trento, Italy
- Loris Vescovo, FEM, Trento, Italy
- Gerhard Wieser, BFW, Innsbruck, Austria

19 students from 14 countries (Austria, Bulgaria, Denmark, Estonia, France, Germany, Italy, Latvia, Poland, Romania, Serbia, Slovenia, Spain, Turkey, United Kingdom) **attended the Summer School:**

Photos from the training course (from top left to bottom right): (1) Research station Centro di Ecologia Alpina, Fondazione Mach, at Monte Bondone in Trentino, Northern Italy; (2) Introduction into eddy covariance methodology; (3) Practicing water potential assessment with the Scholander pressure chamber; (4) and (5) Operating different types of porometers for gas exchange analysis of leaves; (6) Installation of sap flow gauges; (7) Water potential assessment before sunrise (“pre-dawn measurement”); (8) Sunrise at the research station (photos by R. Matyssek).

